

**NON-FOCUSING OPTICS SPECTROPHOTOMETER,
AND METHODS OF USE**

Abstract of the Disclosure

In one aspect, the present invention provides kinetic spectrophotometers that
5 each comprise: (a) a light source; and (b) a compound parabolic concentrator
disposed to receive light from the light source and configured to (1) intensify and
diffuse the light received from the light source, and (2) direct the intensified and
diffused light onto a sample. In other aspects, the present invention provides
methods for measuring a photosynthetic parameter, the methods comprising the steps
10 of: (a) illuminating a plant leaf until steady-state photosynthesis is achieved;
(b) subjecting the illuminated plant leaf to a period of darkness; (c) using a kinetic
spectrophotometer of the invention to collect spectral data from the plant leaf treated
in accordance with steps (a) and (b); and (d) determining a value for a photosynthetic
parameter from the spectral data.

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